

NATIONAL INSTITUTE OF TECHNOLOGY

TIRUCHIRAPPALLI – 15

Department of Production Engineering

Web : www.nitt.edu

Phone : 0431 - 2503515



TENDER DOCUMENT

Tender Notification No.: NITT/R&C/FIST/PROD/KPS/EHTK/2010-11/8

Dated: 18.6.2010

- Name of the component : **ELECTRO HYDRAULIC TRAINER KIT**
- Quantity required : **One Number**
- EMD Amount : **Rs. 10,000/- (Rupees Ten Thousand Only)**
- Delivery : Within four weeks from the date of purchase order
- Last Date of submission of Tender : 20.7.2010 upto 3.00 p.m.
- Address for submission of Tender : The Director
National Institute of Technology
Tiruchirappalli-620 015
Tamil Nadu, India.
With kind attention to: Dr. P. Asokan
Head of the Department/ Production Engg.
- Date of opening of technical bid : **20.7.2010 at 3:30PM**



**NATIONAL INSTITUTE OF TECHNOLOGY
TIRUCHIRAPPALLI – 15**

Department of Production Engineering

Tender Notification No.: NITT/R&C/FIST/PROD/KPS/EHTK/2010-11/8

Dated: 18.6.2010

NOTICE INVITING TENDER

The National Institute of Technology, Tiruchirappalli (NITT) is an autonomous body under MHRD, GOI, imparting Technical Education and engaged in Research Activities. It is proposed to procure the following component for the departmental academic/research activities.

Sealed Quotations under **two cover system** are invited for the following component subject to the following terms and conditions, from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time. The technical cover will be opened on the same day in the presence of bidders or their authorized agents who may choose to be present.

Name of the component : **ELECTRO HYDRAULIC TRAINER KIT**

Quantity required : One Number

EMD : Rs. 10,000/- (Rupees Ten Thousand Only)

Time for completion of supply after placing purchase order : Four weeks

Last Date of submission of Tender : 20.7.2010 upto 3.00 p.m.

Tender to be submitted at the following address: The Director
National Institute of Technology
Tiruchirappalli-620 015
Tamil Nadu, India.
**With kind attention to: Dr. P. Asokan
Head of the Department/ Production Engg.**

Place, Date and time of opening of technical bid:

Date: 20.7.2010 Time: 3:30 PM Venue: Head's Room, Dept. of Production Engineering.

Note : The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee.

SECTION : 1 INSTRUCTION TO BIDDER

1. The bidder should give details of their technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments/Undertakings/public sectors with contact details. The details of the agency/profile should be furnished along with the copy of all related documents.

1.1 Bids are to be submitted under two cover system.

Cover 1:

Cover 1 should contain the following:

- a. ***EMD by Demand Draft drawn on any scheduled bank in favour of "The Director, NIT, Trichy" payable at Trichy should be submitted. EMD shall bear no interest. Any bid not accompanying with EMD is liable to be treated as non-responsive and rejected.***
- b. ***Technical pamphlets***
- c. ***Detailed technical specification***
- d. ***The agency should furnish copy of license certificate for manufacture/supply of the item.***
- e. ***The agency should furnish Income Tax PAN number***
- f. ***Warranty period offered for the tendered item to be specified. If the warranty period is not conforming with the schedule of requirements given in section 3 of the document, the bid is liable to be treated as non-responsive and rejected.***
- g. ***Duly filled up technical questionnaire, if any***
- h. ***Duly filled up deviation schedules to technical specification***
- i. ***Copy of supply orders completed during the last three years ending 31-12-2009.***
- j. ***If the prices are revealed in the cover 1, the offer will be summarily rejected***

- 1.2 ***The cover 1 shall be superscribed as 'Technical cover' duly indicating the Tender reference No. and the due date of opening.***

1.3 Cover 2:

Cover 2 should contain the following

Cover 2 shall contain Price only and shall be superscribed as 'Price Cover' duly indicating the Tender Reference No. and the due date of opening.

Each Cover shall be sent in a double sealed cover. The inner covers (Cover 1 and Cover 2) should be sealed individually with the sellers's distinctive seal and superscribed with the tender reference no. and due date of opening. Both the inner covers shall be placed in a common outer cover which shall also be sealed with seller's distinctive seal and superscribed with the tender reference no. and due date of opening.

Mention "Kind Attention: Dr. P. Asokan, Head of the Department, Department of Production Engg." and submit at the address given in the Notice Inviting Tender.

Cover 1 will be opened on the scheduled date and time mentioned in the tender enquiry. Cover 2 of the technically and commercially suitable offers alone will be opened on a date which will be intimated to the qualified bidders.

2. The agencies should submit their rate as per the format given in Section 4 of the Notice Inviting Tender in this cover. Rate should be quoted in Indian Rupee. The rate should be quoted both in

words and figures. All the pages of the bid should be signed affixing the seal. All corrections and overwriting should be initialed.

3. The tender will be acceptable only from the manufacturers or its authorized supplier.
4. The bid shall be in the format of price schedule given in Section 4. The contract form as per format given in section 5 shall be submitted. Incomplete or conditional tender will be rejected.
5. Details of quantity and the specifications are mentioned in Section 3 appended to this Notice Inviting Tender.
6. The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.
7. The Institute reserves the right to cancel or reduce the quantity included in the schedule of requirements at any time after acceptance of the tender with a notice. The Contractor/Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work/supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
8. Performance Security of 5% of the contract value in terms of Bank guarantee by scheduled banks shall be given by the successful bidder for the total period of warranty.
9. **Release of EMD:** The EMD shall be released after receipt of performance security from successful bidder.
10. **Validity of bids:** The rate quote should be valid for a minimum of 90 days. No claim for escalation of rate will be considered after opening the Tender.
11. **Imports:** In case, goods are to be imported, the Indian agent should furnish authorization certificate by the principles abroad for submission of the bid in response to this Notice Inviting Tender.
12. **Clarification of Tender Document:** A prospective bidder requiring any clarification of the Tender document may communicate to the contact person given in this notice inviting tender.
13. **Amendment of tender document:** At any time prior to the last date of receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the Tender document by an amendment.
14. ***The Institute may at its own discretion extend the last date for the receipt of bids.***
15. The bids shall be written in English language and any information printed in other language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid, the English translation shall govern.
16. The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids without assigning any reasons. The decision of the Institute Purchase Committee is final in all matters of tender and purchase.
17. The bidder should give the following declaration while submitting the Tender.

DECLARATION

I/we have not tampered/modified the tender forms in any manner. In case, if the same is found to be tampered/modified, I/we understand that my/our tender will be summarily rejected and full Earnest Money Deposit (EMD) will be forfeited and I/we am/are liable to be banned from doing business with NIT, Trichy and /or prosecuted.

Signature of the Bidder :

Name and Designation :

Business Address :
.....
.....

Place :

Date :

Seal of the Bidder's Firm

18. Any other details required may be obtained from the contact person given in the notice inviting tender during the office hours.

SECTION : 2 CONDITIONS OF CONTRACT

1. The rates should be quoted in Indian Rupee FOR NIT, Trichy for supply within India.
2. In case of import both CIF and / or FOB rate should be quoted. All components of expenditure to arrive at Chennai need to be explicitly specified.
3. The bidder shall indicate the excise duty exemption for the goods if applicable
4. The Institute is eligible for customs duty and excise duty exemption.
5. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any.
6. Rate quoted should be inclusive of Testing, commissioning and installation of equipment and training.
7. **Payment** : No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier. In case of imports, the payment will be made through LC after installation and performance security need to be submitted at the time of LC commitment.
8. Guarantee and Warrantee period should be specified for the complete period conforming to the section 3 of this tender document.
9. Period required for the supply and installation of item should be specified conforming to the section 3 of this tender document.
10. In case of dispute, the matter will be subject to Tiruchirappalli, Tamil Nadu Jurisdiction only.

SECTION : 3 SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

Name of the Component to be procured : **ELECTRO HYDRAULIC TRAINER KIT**
Specifications : **As per Annexure**
Quantity : **1 No.**

Warranty: 3 Years on Site comprehensive Warranty

Quantity : One built in box with parts specified in technical
speciation along with accessories

Any other details/requirement : The specification provided is minimum requirement

Warranty period required : 3 Years On Site Comprehensive Warranty

Delivery schedule expected after
release of purchase order (in weeks) : 4-6 weeks

EMD (in Rupees) : Rs. 10,000/- (Rupees Ten thousand Only)

Performance Security to be given by
Successful bidder after release of
purchase order (in Rupees) : 5% of the equipment cost

SECTION : 4 PRICE SCHEDULE

[To be used by the bidder for submission of the bid]

- 1. Component Name :
- 2. Specifications (confirming to Section 3 of Tender document-enclose additional sheets if necessary) :
- 3. Currency and Unit Price :
- 4. Quantity :
- 5. Item cost (Sl.No.3 & Sl.No.4) (in Indian Rupee) :
- 6. Taxes and other charges :
 - (i) Specify the type of taxes and duties in percentages and also in figures
 - (ii) Specify other charges in figures
- 7. Warranty period (confirming to the Section 3 of Tender document. This should be mentioned in Technical bid also in order to get qualified for Financial bid) :
- 8. Delivery Schedule (confirming to the Section 3 of Tender document) :
- 9. Name and address of the firm for placing purchase order :
- 10. Name and address of Indian authorized agent (in case of imports only) :

Signature of the Bidder :

Name and Designation :

Business Address :

.....

.....

Place :

Date :

Seal of the Bidder's Firm

SECTION : 5 CONTRACT FORM

[To be provided by the bidder in the business letter head]

1. {Name of the Supplier's Firm) hereby abide to deliver theby the delivery schedule mentioned in the Section 3 tender document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NIT, Trichy during this period.

Signature of the Bidder :

Name and Designation :

Business Address :
.....
.....

Place :

Date :

Seal of the Bidder's Firm

ELECTRO HYDRAULIC TRAINER KIT

Scope

Supply, erection and commissioning of Hydraulic Trainer kit as per specification below:

Purpose: For Engineering College Laboratory – To conduct experiments on fundamental Elector Hydraulics.

PART-A

Qualifying Criteria:

The vendor should have supplied and commissioned similar capacity laboratory electro hydraulic kits and it should be in working condition for minimum One year.

Vendor to attach the reference P.O. copies with specification of such supplies made with customer address and contact phone nos. for our verification. Performance certificates from the customers shall be added along with offer. NITT have all the rights to verify the performance of the equipment supplied from the customers.

For the following technical specification, vendor should give point to point confirmation, with a clear mention about the deviation if any. Also complete technical catalogue should be attached along with offer. Without the above details, the **offer will not be considered** for evaluation.

PART-B

Specification:

1. The Electro hydraulic kit shall be of sleek design and portable one with wheels.
2. Provided with standard steel / Aluminium based mounting board (modular type) for all trainer kits so as to make the mounting of components easier.

3. All the products to be provided with suitable quick disconnect couplings.
4. All the components used shall be of reputed make like Rexroth / Vickers or any other make acceptable to NITT. Vendor to specify the make with catalogue.
5. The following experiments should be possible to carry out using the kit:
 - a) To learn about the fundamentals of electro hydraulics with components (Power supply unit, Relay, Indicator unit and distributor-electrical, Limit switch-electrical- left actuated, Limit switch- electrical-right actuated, DC valves, pressure control valves, Flow control valves, Hydraulic Cylinders, Accessories, etc.,)
 - b) To build an electro hydraulic circuit for applications like hydraulic press circuit, Clamping / de-clamping, Meter-in / meter-out Speed control & load control in Double acting cylinder, counter-balance circuit, deceleration circuit, sequencing function, etc.
6. Vendor to provide the learning resources – basics of electro hydraulics, Different electro hydraulic circuits (minimum 10 experiments) and components for it. Vendor to provide the list of experiments with components required along with offer.
7. Operation & maintenance manual to be supplied - 2 hard copies and 1 soft copy with the equipments.

Scope of supply:

Vendor to supply the following items (minimum):

1. Trolley with Frame
No. of wheels - 4, Two fixed & two swivel type.
Load mounting capacity: 500 kg
2. Hydraulic Power pack with following capacity:
Operating pressure: around 40 bar.
Flow rate: around 5 lpm.
The power pack includes the following components:
 - a) Hydraulic Tank capacity around 5 - 10 liters.

- b) Suitable Pump & electric motor (single phase –230V / 3phase 415V, 50 Hz, 1440 rpm induction motor) coupled with bell housing and mounted externally over the tank with vibro-mounts.
- c) Safety relief valve with variable pressure setting.
- d) Accessories like Drain plug, Suction Strainer, Return line Filter, Valve mounting sub-plates, hydraulic fittings, etc.
- e) Required quantity (min. 8 Nos.) of hydraulic hoses of suitable length with end fittings and quick couplings, transparent hoses on return lines and leakage lines.

3. All types of valves to carry out the experiments proposed. The valves include

- a) Manual operated DC valves.
- b) Solenoid operated DC valves,
- c) Pressure Relief valves
- d) Pressure reducing valves
- e) Pressure sequence valves
- f) Flow control valves
- g) Non-return Valves
- h) Proportional / Servo valves.

4. Cross sectional view of following valves to study the function of each (1 No. of each valve):

- a) Direct Solenoid operated DC valve
- b) Pilot operated DC valve
- c) Pressure Relief valve
- d) Pressure reducing valve
- e) Flow control valve
- f) Non-return Valve

5. Hydraulic Cylinders –

- a) Single acting cylinder – spring return type (Size: Bore dia. around 20mm x rod dia. 12mm x stroke 200mm)
- b) Double acting cylinder (Size: Bore dia. around 20mm x rod dia. 12mm x stroke 200mm)

Max operating pressure : 60 bar

Normal operating pressure : 40 bar

Piston rod : Chrome plated and hardened.

6. Hydraulic motor:

Type : Gear motor / Piston motor

Direction of rotation : Bi-directional

Normal Operating pressure : 40 bar

Max. Pressure : 60 bar

7. Flow meter

Type : Acrylic hone type flow meter with scale, Rotameter

Working Pressure : around 40 bar

8. Equipment trays

The required no. of equipment trays to be supplied. The tray design is such that the supplied components can be kept in the tray. Also the trays have space for each individual component.

9. Pressure Gauges – Required quantity of pressure gauges (glycerin filled) of suitable range to measure the pressure at various points (Pressure line, return line, reduced pressure line, suction line, etc.)

10. Limit switches, Pressure switches and other accessories as required in the experiment.

11. Hand Tools required for carrying out the experiment – 2 sets to be supplied.

12. Guarantee: One year from the date of commissioning the equipment. You should undertake to repair or replace free of charge the defective parts due to faulty design or bad workmanship during the period of one year from the date of commissioning of the equipment. Delivery of replacement or repaired parts must be effected free of charge.

13. Required electrical controls (Power supply unit) with sockets for solenoids, etc. proposed for supply to be specified and listed in the offer

14. Any other items required to carry out the basic experiments and proposed for supply to be specified and listed in the offer.

15. Any other optional items required to improve the performance or to carry out additional experiments and proposed for supply shall be specified and quoted as OPTIONAL, which will be selected based on our requirement.

16. Vendor to inform NITT about the readiness of the equipment for inspection at vendor's works before dispatch. Vendor to arrange for prove out of the system with all the experiments identified at vendor's works during inspection free of cost.

17. Vendor to carry out the erection and commissioning of the equipment at NITT and provide training for minimum 3 persons at NITT, free of cost.

18. Vendor to provide the following documents along with offer for technical evaluation:

1. Reference P.O. copies with specification.
2. Performance certificates from the customers.
3. Photograph / CD of the electro-hydraulic kits supplied earlier.
4. List of Experiments suggested with Electro-Hydraulic circuits of each experiment, along with list of components used.
5. Make of each components used.